

04.28.2020

Leslie Batten
115 15th Ave E., Suite 115
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Dear Leslie and team,

This report summarizes information gathered during the tree inventory conducted on 11.25.2019 on site at Westside Park, property address 5810 156th Ave NE in Redmond, WA. Information collected and compiled in this report follows the *City of Redmond Guidelines for Demonstrating Conformance with Tree Protection Standards*. Please see the attached tree inventory map in reference to this report.

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1.0 Site Conditions

The property is located on an arterial street, 156th Ave NE, just east of the WA-520 freeway, and just west of Marymoor Park. Designated protected areas with associated buffers, including a steep slope, wetland area and creek, are located on site as well as a restoration area managed by a local community group. The scope of this tree inventory was limited to the upland area of the park as outlined by the Project Manager and included in the attached inventory map. The current upland park conditions include a large grassy area with a baseball backstop, large lawn gently sloping toward the wetland and creek area, a basketball court, picnic tables and playground. Most large trees in the upland area of the site are located along the edges of the site, with a few trees clustered in the center of the lawn area. Drainage problems in the lawn area and around the basketball court have been noted in the Geotechnical Report.

2.0 Tree Inventory

I conducted type 1 visual evaluations of all trees within the upland area of the park according to International Society of Arboriculture (ISA) standards, adhering to the ISA code of ethics and best practices. I inspected the trunks and general growing conditions of trees on site from close range and observed tree canopy conditions from afar. In inspecting each tree, I recorded the following information:

- Tree Number
- Evergreen or Deciduous
- Tree Species
- Trunk Diameter at Breast Height (DBH)
- General Tree Health and Conditions (as observed at the time of this inventory)

The City of Redmond regulations regarding the preservation and protection of trees are specified in the Redmond Zoning Code (RZC) 21.72 Tree Protection, as outlined in Section 3.0 of this report. RZC designates trees between 6" - 30" DBH as Significant, and trees over 30" DBH as Landmark, trees under 6" DBH are not significant. Limitations for removal and guidelines for replacement of Significant and Landmark trees are also provided in the Redmond Zoning Code (RZC), section 21.72, as summarized in Section 3.0 of this report.

The following table records information based on measurements and observations made for 62 trees located on-site and 3 trees located off-site with driplines that extend onto the property. Tree numbers (on-site) and letters (off-site) in the left column correspond to numbers shown on the attached inventory map for location reference. The column DBH lists Diameter at Breast Height for each tree. For trees listed as multi-trunk (MT), the DBH has been calculated per Redmond's Guidelines for Demonstrating Conformance with Tree Protection Standards. The trees were not tagged during this inventory.

Tree #	Evergreen/Deciduous	Species	DBH	Healthy	Fair	Dead or Dying	Photo #	Significant	Landmark	Notes
1	Evergreen	Pseudotsuga menziesii	30"	X				X		
2	Evergreen	Thuja plicata	22"	X				X		
3	Evergreen	Pseudotsuga menziesii	26"	X				X		Heavily pruned along north property line.
4	Deciduous	Acer macrophyllum	18.5"	X				X		MT, enlarged basal roots, exposed roots in lawn area
5	Evergreen	Pseudotsuga menziesii	28"	X				X		Grove 1, large basal roots
6	Evergreen	Pseudotsuga menziesii	24"	X				X		Grove 1
7	Evergreen	Thuja plicata	37"	X					X	MT, Grove 1
8	Evergreen	Thuja plicata	23"	X				X		Grove 1
9	Evergreen	Thuja plicata	17"	X				X		MT, Grove 1
10	Deciduous	Acer platanoides	16"		X		P1	X		Grove 1, broken and dead branches in canopy
11	Evergreen	Pseudotsuga menziesii	25"	X				X		Grove 1, heavily pruned along north property line
12	Evergreen	Pseudotsuga menziesii	27"	X				X		Grove 1, co-dominant leaders, one dead leader, lower branches heavily pruned along north property line
13	Evergreen	Pseudotsuga menziesii	30"	X				X		Grove 1
14	Deciduous	Acer macrophyllum	15.6"	X				X		MT, Grove 2, lower branches pruned

										on north and west sides
Tree #	Evergreen/Deciduous	Species	DBH	Healthy	Fair	Dead or Dying	Photo #	Significant	Landmark	Notes
15	Deciduous	Acer macrophyllum	15"	X				X		MT, Grove 2
16	Deciduous	Acer macrophyllum	28"	X				X		Grove 2, three co-dominant leaders ~5.5' above ground, mature crossing leaders
17	Deciduous	Acer macrophyllum	8"		X		P2, P3, P4	X		MT, mounded earth around base, exposed basal roots, depression around root zone on north side, surface roots exposed in lawn area
18	Evergreen	Pseudotsuga menziesii	46"	X					X	Grade around tree must be retained to ensure future health, ~6" diam. dead/broken branches in canopy
19	Evergreen	Pseudotsuga menziesii	42"	X					X	
20	Deciduous	Alnus rubra	9.5"		X			X		MT
21	Deciduous	Fraxinus americana	21"	X				X		
22	Deciduous	Fraxinus americana	16"		X		P5	X		Grove 3, dead and broken branches in canopy
23	Evergreen	Pseudotsuga menziesii	14"			X	P5, P6	X		Grove 3, many dead branches/ thinning canopy, poor needle color, possible circling roots, exposed root damage
24	Evergreen	Pseudotsuga menziesii	13"			X	P5, P6	X		Grove 3, see notes for tree #23, leaning
25	Evergreen	Pseudotsuga menziesii	11"			X	P5, P6	X		Grove 3, see notes for tree #23, leaning

Tree #	Evergreen/Deciduous	Species	DBH	Healthy	Fair	Dead or Dying	Photo #	Significant	Landmark	Notes
26	Evergreen	Pseudotsuga menziesii	11"			X	P5, P7	X		Grove 3, see notes for tree #23, leaning
27	Evergreen	Pseudotsuga menziesii	9"			X	P5	X		Dead, to be inspected by City to assess for removal
28	Evergreen	Tsuga heterophylla	12.5"		X		P8	X		MT, weak leader union, heavy lean
29	Evergreen	Tsuga heterophylla	10.3"		X		P8	X		MT, swollen leader union
30	Evergreen	Tsuga heterophylla	10.5"	X			P9	X		MT, swollen at leader union
31	Deciduous	Acer rubrum	11"	X				X		Leaning west towards picnic table, uneven canopy – no branches on east side
32	Deciduous	Alnus rubra	13"		X			X		Leaning west
33	Deciduous	Alnus rubra	8"		X			X		Leaning east, away from neighboring tree #32
34	Deciduous	Alnus rubra	8"		X			X		Leaning, close to existing snag
35	Evergreen	Pseudotsuga menziesii	22"	X				X		
36	Evergreen	Pseudotsuga menziesii	11"		X			X		Corrected trunk lean, dead branches in canopy
37	Evergreen	Pseudotsuga menziesii	10"			X		X		Dead, to be inspected by City to assess for removal
38	Evergreen	Cupressus leylandii	10"	X				X		Grove 4, forms hedge
39	Evergreen	Cupressus leylandii	14"	X				X		Grove 4, forms hedge
40	Evergreen	Cupressus leylandii	15"	X				X		Grove 4, forms hedge
41	Evergreen	Cupressus leylandii	19"	X				X		Grove 4, forms hedge
42	Evergreen	Cupressus leylandii	11"	X				X		Grove 4, forms hedge
43	Evergreen	Cupressus leylandii	22"	X				X		Grove 4, forms hedge

44	Deciduous	Cercidiphyllum japonicum	11.5"	X				X		
Tree #	Evergreen/Deciduous	Species	DBH	Healthy	Fair	Dead or Dying	Photo #	Significant	Landmark	Notes
45	Deciduous	Cercidiphyllum japonicum	18"	X				X		Possible circling roots
46	Deciduous	Cercidiphyllum japonicum	12"	X				X		
47	Deciduous	Cercidiphyllum japonicum	15"	X				X		
48	Evergreen	Pinus contorta	21"	X				X		
49	Evergreen	Pinus contorta	14.5"	X				X		
50	Evergreen	Pinus contorta	16.5"	X				X		
51	Deciduous	Cercidiphyllum japonicum	9"	X				X		
52	Deciduous	Cercidiphyllum japonicum	8"	X				X		
53	Deciduous	Cercidiphyllum japonicum	7.5"	X				X		
54	Deciduous	Cercidiphyllum japonicum	8.5"	X				X		
55	Deciduous	Cercidiphyllum japonicum	7"	X				X		Street tree
56	Deciduous	Cercidiphyllum japonicum	3"		X					Street tree, not significant
57	Deciduous	Acer platanoides	3"	X						Median Tree, not significant
58	Deciduous	Acer platanoides	3"	X						Median Tree, not significant
59	Deciduous	Acer platanoides	9"	X				X		Median Tree
60	Deciduous	Platanus x acerfolia	18"					X		Median Tree
61	Deciduous	Platanus x acerfolia	16"	X				X		Median Tree
62	Deciduous	Acer platanoides	7"	X				X		Median Tree
A	Deciduous	Fagus sylvatica								Located off-site, canopy extends ~23' onto property
B	Evergreen	Pseudotsuga menziesii								Located off-site, canopy extends ~23' onto property
C	Evergreen	Pseudotsuga menziesii								Located off-site, canopy extends ~23' onto property

3.0 Required Tree Preservation, Protection, and Replacement

Please see the Redmond Zoning Code (RZC) Section 21.72 for more detailed code information, the following is a summary of applicable codes. A permit is required to cut down or remove any significant tree or any stand of trees, or to perform grading activities on a site that will result in the removal of trees (21.72.020).

21.72.060 Tree Protection Measures

In all developments, a minimum of 35 percent of all significant trees shall be retained. Trees that are located within Native Growth Protection Areas, critical areas, and their associated buffers shall not be removed (21.72.060.A). Site improvements shall be designed to protect existing stands of healthy trees; trees providing habitat value; trees having a significant land stability function; trees adjacent to public parks and open space; trees around the site perimeter; and trees that have a screening function (21.72.060.B). No proposed structure, utility, or roadway shall be located within five feet of the dripline of a protected tree, except where such structure is raised above the ground's surface so as not to disrupt the tree's roots. Sidewalks and utilities may be located within the drip line of a protected tree, if construction methods and materials used will result in minimal disruption of the tree's roots, and additional measures for tree protection are proposed and approved. The Administrator may allow construction limits or an alteration of grades within five feet of the drip line of a protected tree, provided that the applicant submits an evaluation by a certified arborist which demonstrates that the proposed construction will not reduce the long-term viability of the tree (21.72.060.C). The tree protection and replacement plan and any application and permit plans that cover such areas shall show all trees designated for protection. These areas may be shown by labeling them as "protected trees", "Native Growth Protection Areas", "critical areas", "critical area buffers", or similar designation. Protected vegetation, including protected trees, shall not be modified, harmed, or removed (21.72.060.D).

21.72.070 Tree Protection Measures

All minimum required tree protection measures shall be shown on the tree protection and replacement plan. All construction activities, including staging and traffic areas, shall be prohibited within five feet of the drip line of protected trees. Tree protection barriers shall be installed five feet beyond the drip line of significant trees prior to any land disturbance. Tree protection barriers shall be a minimum of four feet high, constructed of chain link, or polyethylene laminar safety fencing or similar material, subject to approval by the Administrator. Signs requesting subcontractor cooperation and compliance with tree protection standards may be required at site entrances for large sites (21.72.070.A). In addition to tree protection measures in subsection A, best management practices for tree care may be required as appropriate for maintaining tree health. Best management practices include pruning of visible deadwood, application of fertilizer, soil amendments and soil aeration in tree protection and planting areas, mulching over tree drip line areas, and ensuring proper water availability during and immediately after construction (21.72.070.B).

21.72.080 Tree Replacement

Prior to any tree removal, the applicant shall demonstrate through a tree protection and replacement plan, critical area mitigation plan, or other plans acceptable to the Administrator that tree replacement will meet the minimum standards of this section (21.72.080.A). No replacement tree is required if a tree is proposed to be relocated following the standards of this section, or if the tree to be removed is designated as hazardous, dead, diseased, injured or in declining condition with no reasonable assurance of regaining vigor (21.72.080.B). A significant tree to be removed shall be replaced by one new tree, minimum two-and-one-half-inch caliper size for deciduous trees, and minimum six feet in height for evergreen trees. A landmark tree to be removed shall be replaced by three new trees following the same size standards for significant tree replacement. Replacement trees shall be primarily native species in order to restore and enhance the site as nearly as practicable to its predevelopment character. The condition of replacement trees shall meet or exceed the current American Nursery and Landscape Association standards or equivalent. Installation of required replacement trees shall be in accordance with best management practices for landscaping which ensure the tree's long-term health and viability. All required tree replacement and other required mitigation shall be bonded or completed prior to issuance of a building permit (21.72.080.C).

4.0 Guidelines for Minimizing Construction Impacts to Trees

Per the above stated RZC 21.72.060.C, no proposed structure, utility, or roadway shall be located within five feet of the dripline of a protected tree, except where such structure is raised above the ground's surface so as not to disrupt the tree's roots. Sidewalks and utilities may be located within the drip line of a protected tree, if construction methods and materials used will result in minimal disruption of the tree's roots, and additional measures for tree protection are proposed and approved. Within Tree Protection Areas only manual, hand-operated, equipment and hand excavation or air-spading will be allowed. In areas outside tree protection fencing but within 5' of a tree's dripline, 4" of arborist mulch or coarse wood chips covered by 1" thick plywood must be installed to protect roots from compaction from heavy machinery. The following outlines proposed construction in proximity to trees on site. Please see the Tree Preservation Plan for reference.

- 4.1 **Tree Care During Construction.** In general, trees to remain on site and be protected during construction should receive extra care to ensure health through construction and long-term viability. De-compacting or aerating soil around trees, amending soils with an approved topsoil or compost blend, improving drainage, installing irrigation or establishing a regular watering system for dry months, and applying 2-4" of mulch or coarse arborist chips is recommended for all trees to remain on site within the work area.
- 4.2 **Proposed Planting Areas.** Per above stated RZC 21.72.070, tree protection barriers shall typically be installed five feet from driplines and protected from any disturbance during construction, including prohibition of staging and stockpiling materials in protected areas. In some cases, where soft scaping (such as planting restoration or mulch trails) are proposed, limited work within Tree Protection Areas (TPA) may be acceptable. Acceptable activities within TPAs include de-compacting or aerating soil; amending soil; hand excavation or air-spading performed by a qualified tree professional; installing understory plantings, installing landscape boulders and logs, installing irrigation, and applying mulch, routine maintenance and watering to ensure long-term health of protected trees and new understory plantings.
- 4.3 **Pruning Trees for Construction Clearance and Path Installation.** Areas of the existing canopy will require pruning to avoid damaging limbs during construction and provide overhead clearance. All pruning shall be performed by a certified arborist adhering to American National Standards Institute (ANSI) A300 Standard Practices for Pruning. Pruning shall not remove more than 25% of the tree's canopy within a one-year period. If limbs, or any other part of the tree, are damaged during construction, a certified arborist shall be engaged to assess and mitigate the damage to the tree as soon as possible.
- 4.4 **Proposed Asphalt Paths.** In some areas TPAs have been reduced within the tree's dripline to allow the installation of new paths. Encroachment into a tree's dripline may be acceptable for the installation of walking paths with the following provisions: use of heavy equipment will be limited to the footprint of the new path, if staging or driving heavy equipment outside of the path alignment is required, 4" of arborist mulch or coarse wood chips covered by 1" thick plywood must be installed to protect roots from compaction from heavy machinery; excavation shall generally be as minimal as possible and walking surfaces shall be installed flush with or above existing grade to avoid compaction and excavating or cutting tree roots within the dripline. Where paths are added, proper substrate preparation and installation of drainage, and decompaction of subgrade soils is required. Section details of path installation within tree driplines shall be approved by a certified arborist prior to installation. Special path installation conditions may be needed if surface roots are encountered. All other construction activities are prohibited within 5' of any tree's dripline.
- 4.5 **Excavation and Root Pruning.** Excavation is prohibited within Tree protection Areas. Excavation performed within 5' of a tree's dripline (outside TPAs) should be carefully planned to minimize disturbance and should be performed by hand, or air-spading by a qualified tree professional. Excavation performed with machinery, such as a backhoe, performed in proximity to trees should be performed with flat front buckets, slowly removing small amounts of soil with another person checking the excavated area for roots. When roots are encountered, excavation should stop and roots should be cleanly pruned as needed with sharp, sterile tools. No roots should be ripped, crushed or torn. Root pruning should be limited to the extent possible, and fracturing or breaking roots with excavation equipment should

be avoided. Cut roots should be immediately covered with soil or mulch and kept moist. Engaging a certified arborist to oversee excavation within 5' of driplines is recommended.

- 4.6 Proposed/Existing Sport Court.** Reduction of TPAs and encroachment into a tree's dripline may be acceptable where impervious concrete or asphalt currently exists and will be removed or remain in place. If excavation will occur within the trees' dripline, air-spading performed by a qualified tree professional is recommended within the encroachment area prior to construction. No heavy equipment, staging, construction, or excavation will be allowed within Tree Protection Areas.

5.0 Use of This Report

This report provides Board & Vellum detailed information about trees on, or directly adjacent to, the project site for the purpose of addressing the City of Redmond's requirements for tree preservation and replacement during development. If guidelines and applicable codes outlined in this document are followed, and existing trees are protected and cared for according to best practices, it is my opinion that trees designated as healthy and in good condition at the time of this document have a good probability of survival through construction.

It is important to note that trees are dynamic, and their conditions can be affected by weather events and environmental changes. Therefore, this report exclusively warrants the conditions of the trees at the time of my evaluation on site. Additionally, Hailey Mackay and Board & Vellum cannot be held liable for any damage that results from the failure of any trees or their parts, or the death or decline of any trees on site before, during or after construction.

Thank you,



Hailey Mackay, ASLA

ISA Certified Arborist #PN-8777A

ISA Tree Risk Assessment Qualified

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6.0 Inventory Photos



P1 - #10, *Acer platanoides*



P2 - #17, *Acer macrophyllum*



P3 - #17, *Acer macrophyllum*



P4 - #17, *Acer macrophyllum*



P5 - #22, 23, 24, 25, 26, 27, *Fraxinus Americana* (foreground x1), *Pseudotsuga menziesii* (foreground dead x1), *Pseudotsuga menziesii* (background x4)



P6 - #23, 24, 25, 27 *Pseudotsuga mezesii* (foreground x3, background dead x1)



P7 - #24, 25, 26, 27, *Pseudotsuga mezesii* (foreground x3, background dead x1)



P8 - #28, 29, *Tsuga heterophylla*



P9 - #30, *Tsuga heterophylla*

